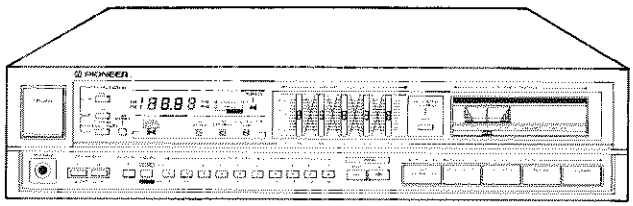
Operating Instructions

STEREO RECEIVER

SX-1500
SX-1500L

- *These operating instructions are applicable to models SX-1500 and SX-1500L.*
- *The illustration is for the model SX-1500. However, the description also applies to the model SX-1500L.*



(The illustration shows model SX-1500)

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE

[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

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SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS — The operating instructions should be retained for future reference.

HEED WARNING — All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

WATER AND MOISTURE — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION — The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING — The appliance should not be mounted to a wall or ceiling.

VENTILATION — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION — If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING — The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES — An outdoor antenna should be located away from power lines.

NONUSE PERIODS — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE — The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

SERVICING — The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING — If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.

In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

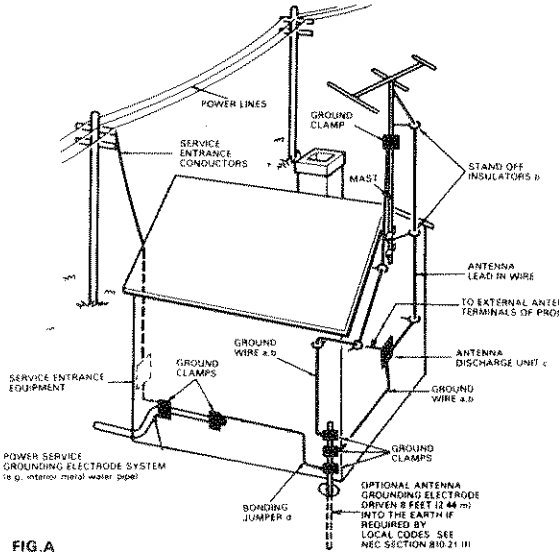

POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND-OFF INSULATORS b
ANTENNA LEAD-IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUND WIRE a,b
ANTENNA DISCHARGE UNIT c
GROUND CLAMPS
SERVICE ENTRANCE EQUIPMENT
GROUND WIRE a,b
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
BONDING JUMPER d
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES SEE NEC SECTION 810-21 (f)

FIG.A

a) Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel, bronze wire, or larger as ground wire.

b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.

c) Mount antenna discharge unit as closely as possible to where lead-in enters house.

d) Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper or equivalent when separate antenna-grounding electrode is used.

IMPORTANT 1

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Equipment sold in the U.K. is not supplied with a power plug.

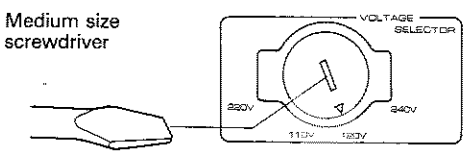
BEFORE OPERATING, CHECK THE POSITION OF THESE SWITCHES

LINE VOLTAGE SELECTOR SWITCH

Only multi voltage models are provided with this switch. U.S.A., Canada, U.K., Australia and Europe models are not provided with this switch.

You will find the line voltage selector switch on the rear panel. Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet. If the voltage is not properly set, or if you move to an area where the voltage requirements differ, adjust the selector switch as follows. Before adjusting, disconnect the power cord.

1. Use a medium-size screwdriver.
2. Insert the screwdriver into the groove of the selector switch and turn it to the voltage value in your area.



CHANNEL STEP SWITCH

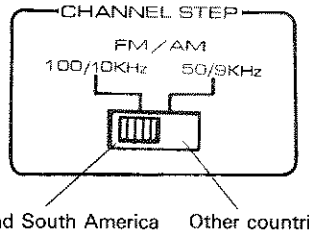
Only multi voltage models are provided with this switch. U.S., Canadian, European, U.K., and Australian models are not provided with this switch.

Before your model is shipped from the factory, the switch is set to the channel allotment plan of the destination; nevertheless, you should check that it is set properly before use.

If the switch is set to the wrong position, figures on the frequency display will not come to a stop with FM or AM tuning.

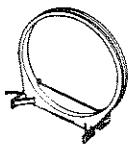
NOTE:

Contact your dealer for more information if you are not sure about the channel allotment plan in your area.



CHECKING ACCESSORY ITEMS

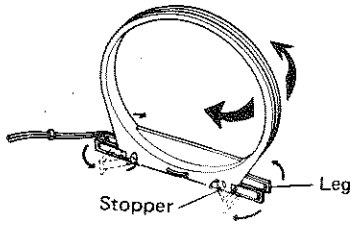
FM T-type Antenna



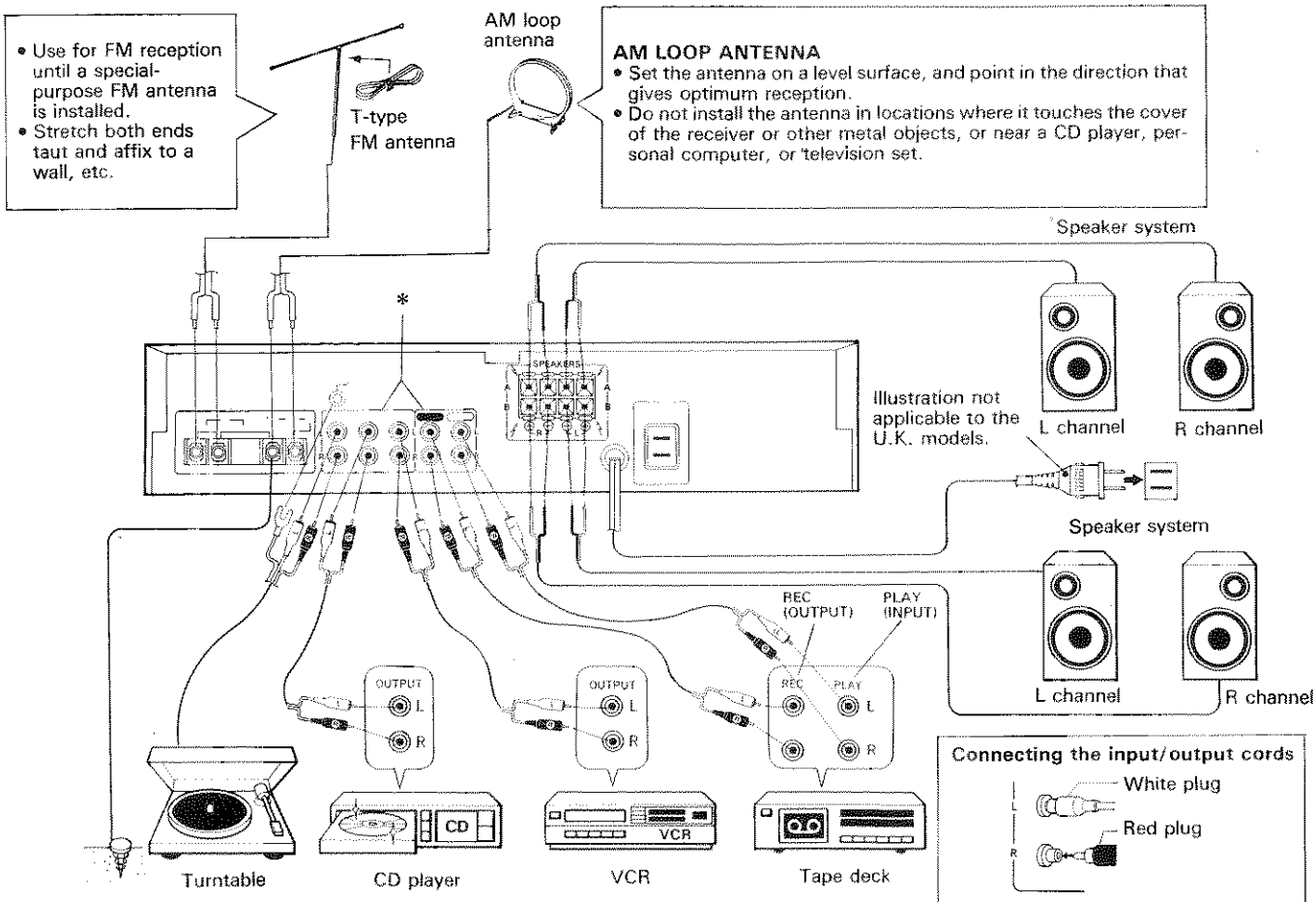
AM Loop Antenna

AM loop antenna construction

- Unfold all four legs of the AM loop antenna toward the outside, and insert the stopper inside the legs into the hole in the AM loop antenna to fix it in position.



CONNECTIONS


• Use for FM reception until a special-purpose FM antenna is installed.
• Stretch both ends taut and affix to a wall, etc.
T-type FM antenna
AM loop antenna
AM LOOP ANTENNA
• Set the antenna on a level surface, and point in the direction that gives optimum reception.
• Do not install the antenna in locations where it touches the cover of the receiver or other metal objects, or near a CD player, personal computer, or television set.
Speaker system
L channel
R channel
Illustration not applicable to the U.K. models.
Speaker system
L channel
R channel
REC (OUTPUT)
PLAY (INPUT)
OUTPUT
L
R
CD
VCR
Turntable
CD player
VCR
Tape deck
Connecting the input/output cords
White plug
Red plug

Antenna ground
Although grounding is not necessary for reception it is recommended for protection against damage from lightning if an outdoor FM antenna is used. Grounding is recommended as well to help reduce noise and hum.

NOTE:
Never make the ground connection to a gas pipe as sparks could cause the gas to ignite.

* The INPUT and TAPE/ADAPTER terminals of this unit are dull tin-plated, aiming at high audio quality.

AC Outlet

UNSWITCHED:
Power flows continually to this outlet, regardless of whether the receiver's POWER switch is ON or OFF. Electrical power consumption of the connected equipment should not exceed 100 W.
The equipment should be disconnected by removing the mains plug from the wall socket when not in regular use, e.g. when on vacation.

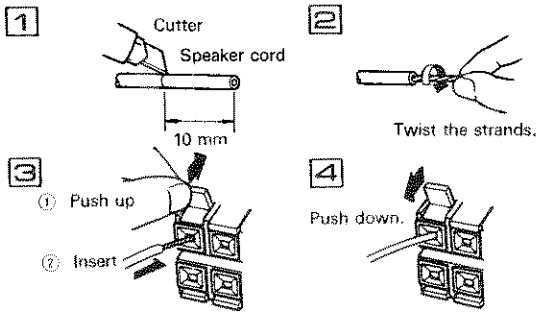
NOTE:
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLETS, in order to avoid overheating or fire risk.
This can cause the receiver to malfunction.

Speaker Impedance

Use speaker systems with an impedance ranging from 8 ohms to 16 ohms.

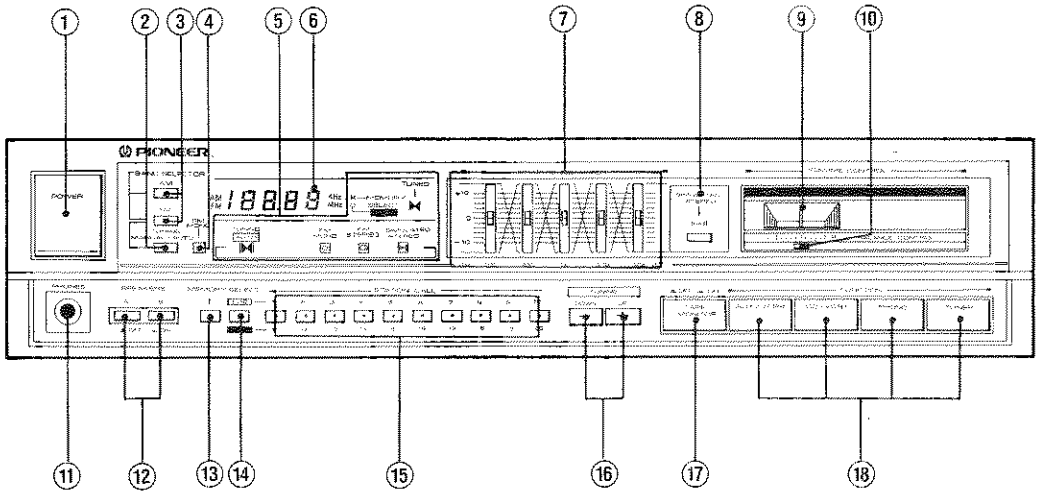
When another stereo component (purchased separately) is connected, note the following instructions:
- Connect the plugs properly. Faulty connections can cause noise and also breakdowns and failures.
- The white terminal is for the left channel and the red terminal is for the right channel.

Connecting the speaker cords.



NOTE ABOUT SPEAKER CONNECTIONS
- Speaker systems used should have an impedance of between 8 and 16 ohms
- Be sure that connections are secure. Check to make sure that wires do not protrude from their terminals.
- Do not allow the speaker cords to become shorted. Damage may result to your amplifier.
- Do not attempt to simultaneously connect two sets of speakers to a single side (A or B). When using two sets of speakers, connect one set to side A and one set to side B.

FRONT PANEL FACILITIES



The illustration shows model SX-1500.

① POWER button

When this button is pressed, power is supplied to the unit. To turn power off, press the button again to the released position.

② TUNING MANUAL/AUTO button

Works during FM reception. Use to select either the AUTO mode or MANUAL mode for FM reception.
Indicators on the display panel show whether the mode selected is MANUAL or AUTO.

③ BAND SELECTOR buttons

[Model SX-1500]
These buttons are used to select either AM or FM reception.
AM: Push this button for AM reception.
FM: Push this button for FM reception.

[Model SX-1500L]
These buttons are used to select MW, LW or FM reception.
MW/LW: Every time the MW/LW button is pressed, MW or LW reception is selected alternately. The band selected, MW or LW, is indicated alternately on the frequency display for easy confirmation.
FM: Push this button for FM reception.

④ FM MONO button

Normally, the MONO indicator remains off. However, it may not be possible to tune in a desired FM station because it is too far away or because its signals are too weak. In cases like these, press the button to set the reception to the monaural mode (MONO indicator lights) and tune in the station. The program of an FM stereo broadcast will be heard in mono.
The setting of the FM MONO button (ON or OFF) is memorized along with the station's frequency in the STATION CALL buttons.
When using the preset tuning feature, reception will be in the mode selected when the station was memorized.
This button will not function for AM (MW or LW) reception.

⑤ Indicators

[MEMORY] (M)
This lights when the MEMORY button is pressed. Stations can be preset into the STATION CALL buttons while this indicator is on.
[SELECT (11 — 20)] (■)
This lights when the SELECT button is pressed and mode 2 (11 — 20) is established.
[TUNED] (⋈)
This lights to indicate that a station has been optimally tuned in.
[TUNING AUTO] (|⋈|)
Lights when the auto tuning mode is selected during FM reception.
[FM MONO] (⊙)
Lights when the FM MONO button is pressed to select monaural FM reception.
[FM STEREO] (⊙)
This lights during FM stereo reception.
[SIMULATED STEREO] (⊙)
This lights when the simulated stereo button is pressed and the simulated stereo mode is established.

⑥ Frequency display

This display normally shows the frequency of the station selected. When a STATION CALL button is pressed, the channel number for that station (the number of the STATION CALL button) is displayed for a few seconds. The display will show [--CH] during other than preset tuning.

⑦ GRAPHIC EQUALIZER controls

The equalizer is divided into five frequency ranges (100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz) to tailor music to the individual taste of the listener.

⑧ SIMULATED STEREO button

This turns monaural signals into simulated stereo sound. Use this when you wish to experience the sense of stereo presence with AM broadcasts, VCR or other monaural signal sources.

NOTE:
This function can also be used with stereo sources, but it will result in a different sound from the normal stereo sound.

⑨ VOLUME control

⑩ BALANCE control

⑪ PHONES jack

This is a standard "plug-type jack" for headphones.

⑫ SPEAKERS buttons (■ OFF, ▬ ON)

These are used to select the speaker through which you wish to listen.

A: When the speakers connected to A terminals are in use.
B: When the speakers connected to B terminals are in use.
• Turn both A and B speakers to OFF position when only the HEADPHONES are in use.

NOTE:
No sound will be heard through the speakers when both A and B buttons are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

⑬ MEMORY button

This is used to memorize stations. When the button is pressed, the MEMORY indicator will light. To memorize the frequency of any station, press the STATION CALL button while the MEMORY indicator is lit.

⑭ SELECT button

This button is used to set the STATION CALL buttons to Mode 1 (1—10) or MODE 2 (11—20). Mode 2 (11—20) is obtained when the button is pressed and select indicator is lit.

NOTE:
Changing the position of this button has no effect on receiver performance itself.

⑮ STATION CALL buttons

These are used to recall preset broadcasting stations and to preset the station.

⑯ TUNING buttons (−, +)

The function of these buttons differs according to whether AUTO tuning or MANUAL tuning is selected during FM reception. The MANUAL tuning mode is automatically selected for AM reception.

[AUTO tuning mode]
When the "+" button is pressed, the frequencies are scanned in ascending order; when the "−" button is pressed, they are scanned in descending order. Scanning stops as soon as a station has automatically been tuned in.

[MANUAL tuning mode]
When the "+" button is pressed, the frequency increases and when the "−" button is pressed, it decreases. Every time either button is pressed, the frequency changes one step at a time and when the button is kept pressed, the frequency changes continuously.

⑰ TAPE MONITOR button (■ OFF, ▬ ON)

[TAPE MONITOR]
Press when playing the tape deck connected to the TAPE jacks.

⑱ FUNCTION buttons

[AUX/VCR 2]
Press when listening to a stereo component connected to the AUX/VCR 2 jacks.

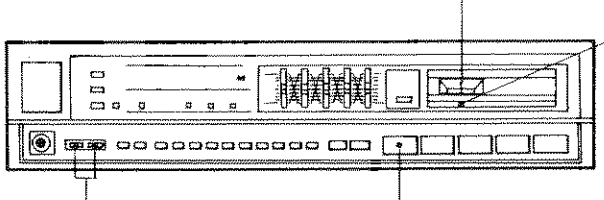
[CD/VCR 1]
Press when listening to a stereo component connected to the CD/VCR 1 jacks.

[PHONO]
Press when playing records on a turntable connected to the PHONO jacks.

[TUNER]
Press when listening to a radio broadcast.

SETTING THE UNIT PRIOR TO OPERATION

• Before operating the unit, be sure to set it as shown below.


Set the volume control to the "0" position.
Set the BALANCE control to the center position.
Press the SPEAKERS button corresponding to the speaker system to be used.
Set the TAPE MONITOR button to ■ OFF (recessed position).

GRAPHIC EQUALIZER CONTROLS

The advantage of the GRAPHIC EQUALIZER over conventional tone controls is that with the five controls of the GRAPHIC EQUALIZER it is possible to control five different narrow, distinct sections of the audio band. With conventional tone controls a setting for a bass or treble boost or cut will also affect the lower or upper mid frequencies. The frequency bands controlled by the five slide controls have been chosen to yield the maximum possible control action within the audio spectrum.

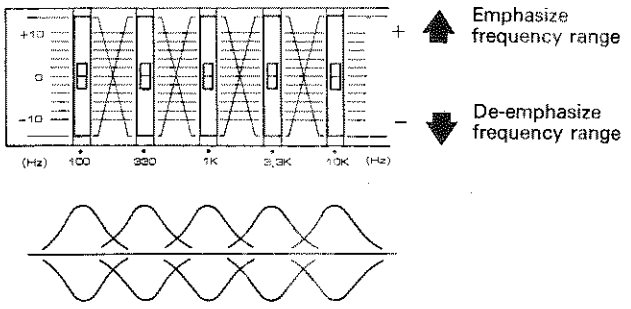
100 Hz: The 100 Hz control is very useful in enhancing low bass notes as in organ music.

330 Hz: The 330 Hz control will allow you to vary the upper bass frequencies.

1 kHz: The 1 kHz control is the presence control and can be used very effectively to emphasize, or de-emphasize vocalists.

3.3 kHz: The 3.3 kHz control will add brilliance and clarity to brass instruments and violins.

10 kHz: The 10 kHz control can be used to make up for missing high frequencies absorbed by the environment and to add a natural crispness to music.

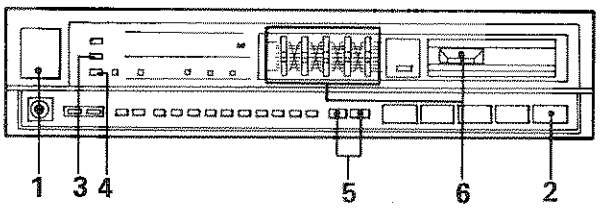


LISTENING TO THE BROADCAST

- Check that all terminals are properly connected before switching on the unit.

AUTO TUNING (FM reception)

The electronic tuning circuit inside the unit will search for your desired station automatically.



1 Turn on the POWER button of the unit.

2 Press the TUNER button of the FUNCTION buttons.

3 Set the BAND SELECTOR buttons for FM reception.

4 Press the TUNING MANUAL/AUTO button to establish the AUTO tuning mode (the TUNING AUTO indicator lights).

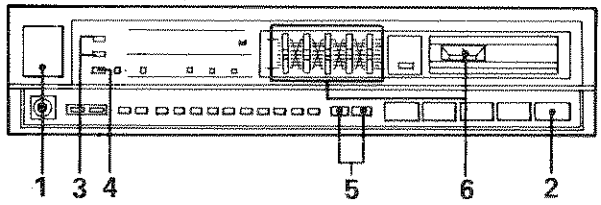
5 Press the TUNING buttons " + " or "–" for a higher or lower frequency as desired.

The frequency will change rapidly during scanning. The AUTO TUNING will stop automatically when the desired station is located and the TUNED indicator will light up.

NOTE:
When the AUTO TUNING is in use, reception may not be possible over long distances or when signals are weak. At these times manual tuning is recommended.

6 Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.

MANUAL TUNING (FM/AM(MW/LW) reception)



1 Turn on the POWER button of the unit.

2 Press the TUNER button of the FUNCTION buttons.

3 Select your desired broadcasting band using the BAND SELECTOR buttons.

4 Press the TUNING MANUAL/AUTO button to establish the MANUAL tuning mode (the TUNING AUTO indicator goes off).

5 Use the TUNING buttons to locate the frequency of your desired station.

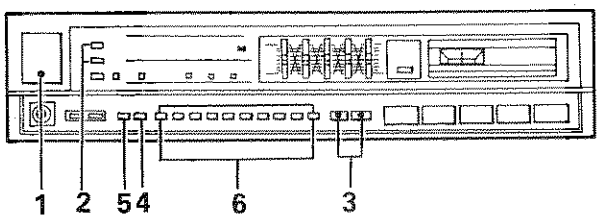
For step-by-step searching, press the TUNING button once and release it immediately. For continuous rapid scanning keep the TUNING button pressed. The TUNED indicator will light up when the desired station is tuned in best.

NOTE:
The TUNED indicator will not function for broadcasts received over long distances or when signals are weak.

6. Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.

PRESETTING STATIONS

PRESETTING



1 Turn on the POWER button of the unit.

2 Select band of station to be memorized.

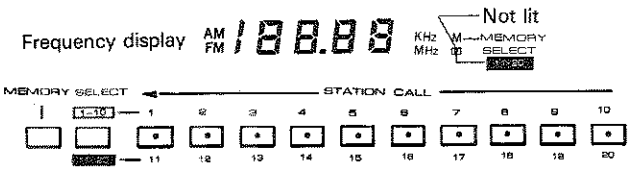
3 Tune in desired station.

- See the AUTO tuning section for information on reception using Auto Tuning.
- See the MANUAL tuning section for information on reception using Manual Tuning.

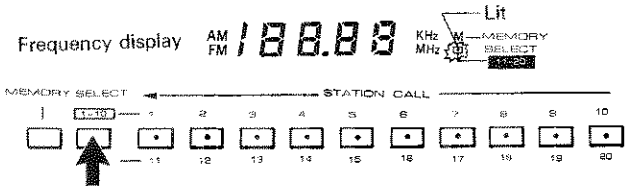
When memorizing an FM station, either press the FM MONO button to forcibly memorize the station in the monaural mode, or memorize the station in the auto stereo mode (with FM MONO button left in the OFF position).

4 Press the SELECT button to select Mode 1 or Mode 2.

When presetting using Mode 1 STATION CALL buttons,



When presetting using Mode 2 STATION CALL buttons,



5 Press the MEMORY button.

- The MEMORY indicator lights.

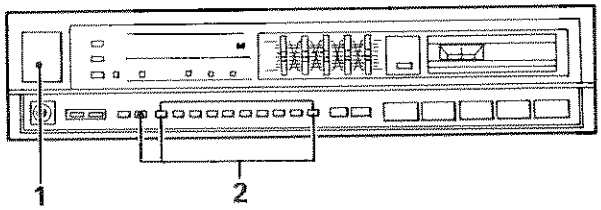
6 Press the STATION CALL button into which you wish to preset the station.

- When the MEMORY indicator goes out, presetting is no longer possible. Press the Memory button again to perform presetting.

7 Repeat steps 2 to 6 to preset stations into buttons 1 through 20.

Up to 20 AM (MW and LW) and FM stations may be preset.
If you accidently preset a station into a STATION CALL button which contains information, it will be erased and the new station will be entered instead.

RECEPTION USING PRESET TUNING



1 Turn on the POWER button of the unit.

2 Press the STATION CALL button into which the desired station has been preset. (When necessary, do not neglect to perform Station Mode selection as well.)

Tuning can be performed simply and accurately by following the above procedure.

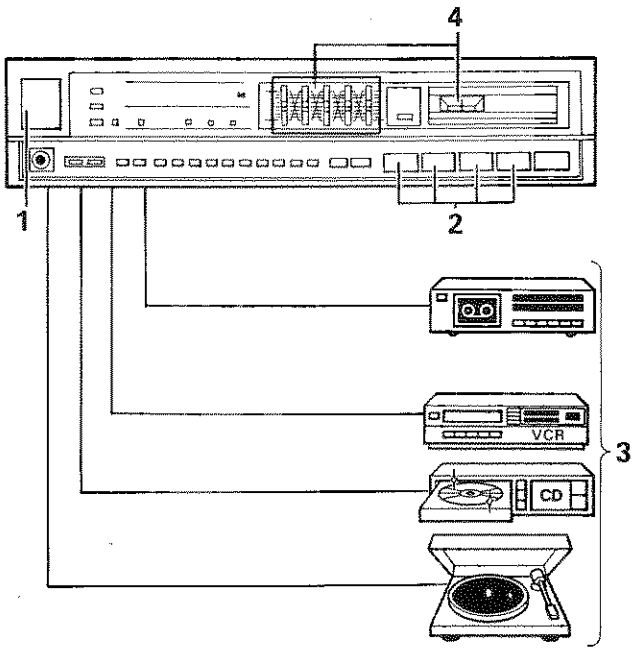
NOTE:

- *The contents of the STATION CALL buttons will be preserved for about a month, even if the receiver's power cord is unplugged.*
- *If a preset station has been erased, reset it.*

Last station memory

- When the POWER button is pressed to turn power on, the last station received before the power was previously turned off will be received again.
- When power is ON, if the BAND SELECTOR button is pressed, the last station received before the BAND SELECTOR button was previously pressed will be received again.

TO LISTEN TO OTHER MUSIC SOURCES

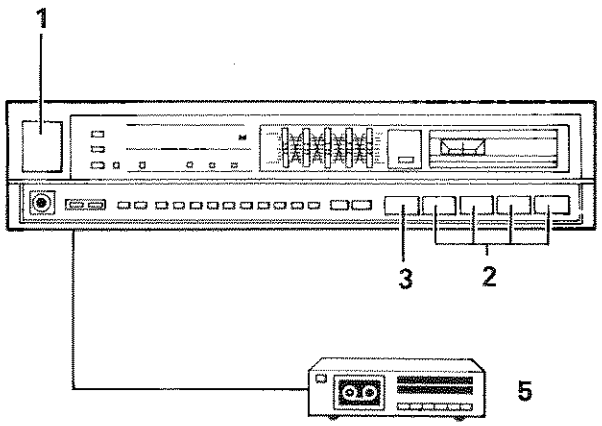


1. **Turn on the POWER button of the unit. Also turn on the power to the stereo components you wish to use.**
2. **Use the FUNCTION buttons and TAPE MONITOR button as appropriate to select the desired program source.**

	FUNCTION button	TAPE MONITOR button
To listen to a tape on the tape deck connected to TAPE jacks	—	■ ON
To listen to the component connected to AUX/VCR2 jacks	AUX/VCR2	■ OFF
To listen to a CD	CD/VCR1	■ OFF
To listen to the component connected to CD/VCR1 jacks		
To listen to records	PHONO	■ OFF

3. **Operate the appropriate stereo component to play back the program source.**
4. **Adjust the volume with the VOLUME control and the tone with the GRAPHIC EQUALIZER controls.**

TAPE RECORDING



You can record to an FM or AM (MW or LW) broadcast, or a sound source connected to the AUX/VCR2 or CD/VCR terminals.

1. **Turn on the POWER button of the unit.**
2. **Select the sound source to be recorded.**
3. **Set the TAPE MONITOR switch to ■ OFF.**
4. **Turn on (or start) the sound source to be recorded.**
   - Refer to Pages 7 to 9.
5. **Operate the tape deck connected to the TAPE/ADAPTOR terminals.**
   - For details of operating the tape deck, read the operating instructions of the tape deck.

HINTS FOR BETTER RECEPTION

EXTERNAL FM ANTENNA

The main advantage of FM over AM is the quality of the broadcast signal. In order to benefit fully from the high signal quality of FM broadcasts, it is recommended that a special-purpose FM antenna be installed. In weak signal areas, a multi-element (3 element, 5 element, 7 element) antenna should be used.

FM OUTDOOR ANTENNA CONNECTIONS

There are two ways of connecting the FM antenna to the antenna input terminals: with a 300-ohm twin-lead feeder or with a 75-ohm coaxial cable. To get the most from the receiver performance, a 75-ohm coaxial cable is recommended since it is more immune than the twin-lead feeder to noise and interference from external sources. If an FM antenna has already been erected outdoors, connect it, referring to the figure.

GROUNDING

Grounding is recommended if reception of FM programs is impaired by noise. To ground, connect a thick polyvinyl insulated wire to the GND terminal and attach the other end to a metal water pipe or grounding bar or wind it around a copper plate and bury it.

NOTE:
Never connect a wire to a gas pipe for grounding since sparks may ignite the gas.

EXTERNAL AM ANTENNA

If it is not possible to obtain adequate AM reception even by changing the orientation of the AM loop antenna, a separate indoor antenna, or an outdoor antenna should be installed.

INDOOR AM ANTENNA

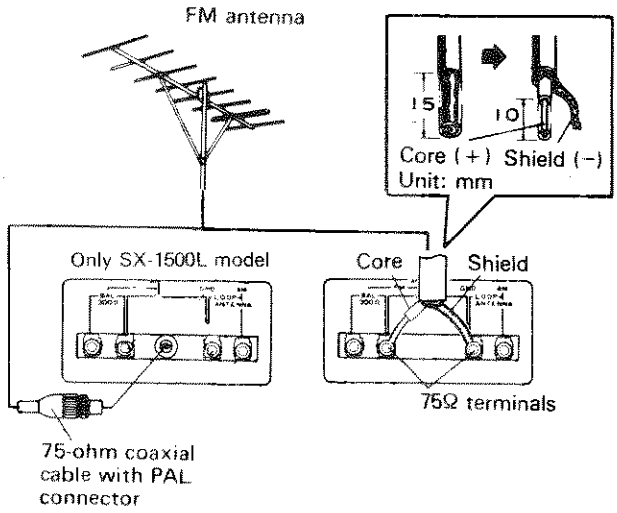
Use a vinyl insulated wire (5 — 6 m) and connect one end to the AM antenna terminal and affix the other end to the wall or ceiling, as high as possible.

OUTDOOR AM ANTENNA

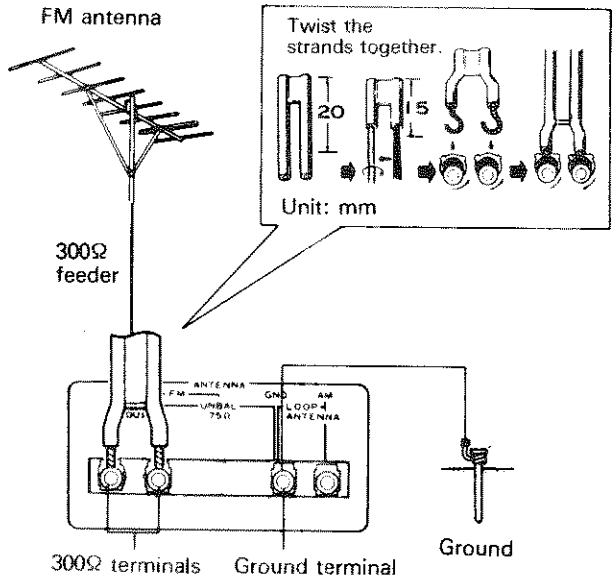
If reception quality is not improved sufficiently even when an indoor antenna is used, a vinyl insulated wire should be installed outside and fixed in place.

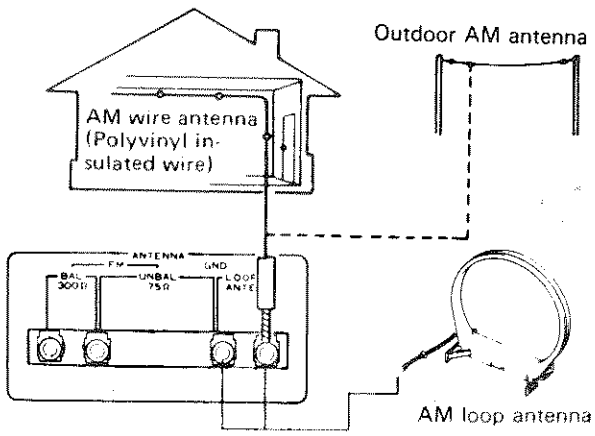
NOTE:
Do not detach the AM loop antenna when using an indoor or an outdoor AM antenna.

Connecting the coaxial cable



Connecting the 300Ω feeder





TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.
If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
Power does not come on even when POWER switch is pressed.	• Power cord is disconnected.	• Connect cord securely.
No sound is produced, even when FUNCTION switch is selected.	• VOLUME control is set to 0 (MIN).	• Slide the VOLUME control towards the right.
	• Speaker connecting wires are disconnected from speaker terminals.	• Connect wires to terminals securely.
	• One or both of the input cords are disconnected.	• Connect input cords securely.
	• TAPE MONITOR switch is in the ON position.	• Press the switch again to the OFF position.
Sound is produced from one speaker only.	• BALANCE control is set too far to one side or the other.	• Set BALANCE control to center position.
	• One of the speaker connecting wires or input cords is disconnected.	• Connect wires and cords securely.
Noise is produced during reception of AM broadcasts when the power switch of this unit or other components is turned ON or OFF.	• AM loop antenna picks up electrical noise created by switch contacts.	• Place AM loop antenna as far away as possible from this and other components.
High noise level.	• Station has not been tuned in to correct frequency.	• Tune the station in correctly.
	• Antenna has not been connected or has become disconnected.	• Connect the antenna securely.
	FM reception • Accessory T-type antenna remains bundled up or it is not pointing in the right direction.	• Stretch both ends of antenna taut and locate in direction yielding optimum reception.
	• Weak broadcasting station signals.	• Replace accessory T-type antenna with outdoor FM antenna.
	• Noise picked up from other equipment (or, in particular, from passing automobiles). • Multipath results when signals from broadcasting station entering antenna directly are mixed with signals which have been reflected by mountains or high buildings on their way to antenna. This results in distorted sound and noise.	• Try altering direction and mounting position of antenna. If an outdoor antenna has been erected, place it as far away as possible from passing traffic and replace connecting cable with 75-ohm coaxial cable.
	AM(MWorLW) reception • AM antenna not pointing in right direction.	• Change AM antenna's direction and find a position where reception is improved.
	• Weak broadcasting station signals.	• Erect outdoor AM antenna or connect ground wire.
	• Noise being picked up from other equipment (especially electrical appliances using motor or fluorescent lights).	• Stop using appliances generating noise or remove them from vicinity of stereo equipment.
No auto stop. (FM reception)	• Input signals are not strong enough.	• If a T-shaped antenna is used, change over to an outdoor antenna. • Perform manual tuning.

SPECIFICATIONS

[Model SX-1500]

Amplifier Section

Continuous Average Power Output is 45 watts* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz with no more than 0.3% total harmonic distortion.

Continuous Power Output (both channel driven)
- 1 kHz, T.H.D. 0.3%, 8 Ω ..... 48 W + 48 W
- 40 Hz — 20 kHz, T.H.D. 0.3%, 8 Ω ..... 45 W + 45 W

Total Harmonic Distortion
- 1 kHz, 22.5 W, 8 Ω 0.05%

Input (Sensitivity/Impedance)
- PHONO ..... 2.5 mV/47 kΩ
- CD, TAPE PLAY, AUX, VCR ..... 150 mV/22 kΩ

Phono Overload Level (T.H.D. 0.01%, 1,000 Hz)
- PHONO ..... 130 mV

Output Level
- TAPE REC ..... 150 mV

Frequency Response
- PHONO (RIAA Equalization) ..... 30 Hz to 20,000 Hz ±0.5 dB
- CD, AUX, VCR ..... 10 Hz to 70,000 Hz $\pm^{0.5}_{3.0}$ dB

Hum and Noise (IHF, short circuited, A network)
- PHONO ..... 72 dB
- CD, TAPE PLAY, AUX, VCR ..... 94 dB

Graphic Equalizer frequency band ..... 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±8 dB

FM Tuner Section

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 11.2 dBf, IHF (1.0 μV/75 Ω)
50 dB Quieting Sensitivity ..... MONO: 15.3 dBf (1.6 μV/75 Ω)
STEREO: 38.3 dBf (22.5 μV/75 Ω)

Signal-to-Noise Ratio
- MONO ..... 78 dB (at 85 dBf)
- STEREO ..... 75 dB (at 85 dBf)

Distortion
- STEREO ..... 0.5% (1 kHz)

Alternate Channel Selectivity ..... 55 dB (400 kHz)
Stereo Separation ..... 35 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz, $(\pm\frac{1}{2})$ dB
Antenna Input ..... 300 Ω balanced, 75 Ω unbalanced

AM Tuner Section

Frequency range
- When 10 kHz step ..... 530 kHz to 1,600 kHz
- When 9 kHz step ..... 531 kHz to 1,602 kHz

Sensitivity
- IHF, Loop antenna ..... 300 μV/m

Selectivity ..... 20 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... AM Loop Antenna

Miscellaneous

Power Requirements
- U.S., Canadian model ..... AC 120 Volts, 60 Hz
- Other destination models ..... AC 110/120/220/240 V (switchable) 50/60 Hz

Power Consumption ..... 175 Watts
Dimensions ..... 420 (W) x 98 (H) x 220 (D) mm
16-9/16 (W) x 3-7/8 (H) x 8-11/16 (D) in
Weight (without package) ..... 4.3 kg (9 lb 8 oz)

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Operating Instructions 1

** Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

[Model SX-1500L]

Amplifier Section

Continuous Power Output (both channel driven)
- 1 kHz, T.H.D. 1%, 8 Ω ..... 46 W + 46 W (DIN)
- 1 kHz, T.H.D. 0.3%, 8 Ω ..... 43 W + 43 W
- 40 Hz — 20 kHz, T.H.D. 0.3%, 8 Ω ..... 40 W + 40 W

Total Harmonic Distortion
- 1 kHz, 20 W, 8 Ω ..... 0.05 %

Input (Sensitivity/Impedance)
- PHONO ..... 2.5 mV/47 kΩ
- CD, TAPE PLAY, AUX, VCR ..... 150 mV/22 kΩ

Phono Overload Level (T.H.D. 0.01%, 1,000 Hz)
- PHONO ..... 130 mV

Output Level
- TAPE REC ..... 150 mV

Frequency Response
- PHONO (RIAA Equalization) ..... 30 Hz to 20,000 Hz ±0.5 dB
- CD, AUX, VCR ..... 10 Hz to 70,000 Hz $\pm^{0.5}_{3.0}$ dB

Signal-to-Noise Ratio (IHF, short circuited, A network)
- PHONO ..... 72 dB
- CD, TAPE PLAY, AUX, VCR ..... 94 dB

Signal-to Noise Ratio (DIN, continuous power/50 mW)
- PHONO ..... 66 dB/60 dB
- CD, TAPE PLAY, AUX, VCR ..... 80 dB/61 dB

Graphic Equalizer frequency band ..... 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ±8 dB

FM Tuner Section

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 11.2 dBf, IHF (1.0 μV/75 Ω)
50 dB Quieting Sensitivity ..... MONO: 15.3 dBf (1.6 μV/75 Ω)
STEREO: 38.3 dBf (22.5 μV/75 Ω)
Sensitivity (DIN) ..... MONO: 0.9 μV/75 Ω
STEREO: 29 μV/75 Ω
Signal-to-Noise Ratio ..... MONO: 78 dB (at 85 dBf)
STEREO: 75 dB (at 85 dBf)
Signal-to Noise Ratio (DIN) ..... MONO: 67 dB
STEREO: 60 dB

Distortion
- STEREO ..... 0.5% (1 kHz)

Alternate Channel Selectivity ..... 55 dB (400 kHz)
Stereo Separation ..... 35 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz, $\pm\frac{1}{2}$ dB
Antenna Input ..... 300 Ω balanced, 75 Ω unbalanced

MW Tuner Section

Frequency range ..... 531 kHz to 1,602 kHz
Sensitivity
- IHF, Loop antenna ..... 400 μV/m

Selectivity ..... 20 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... AM Loop Antenna

LW Tuner Section

Frequency range ..... 153 kHz to 281 kHz
Selectivity ..... 20 dB
Signal-to Noise Ratio ..... 50 dB
Antenna ..... AM Loop Antenna

Miscellaneous

Power Requirements
- European models ..... a.c. 220 V~, 50/60 Hz
- U.K. model ..... a.c. 240 V~, 50/60 Hz

Power Consumption ..... 290 Watts
Dimensions ..... 420 (W) x 98 (H) x 220 (D) mm
Weight (without package) ..... 4.7 kg

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Operating Instructions 1

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

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